

Axiophyte diversity versus total species diversity in Devon

Jeremy Ison, 40 Willeys Avenue, Exeter, Devon, EX2 8ES

Jeremy@jison.freemove.co.uk

The data presented here form part of the results of an investigation into whether a simple count of axiophytes (BSBI 2008) recorded at a site was sufficient to distinguish between sites worthy of County Wildlife Site (CWS) status and those that did not meet the necessary criteria.

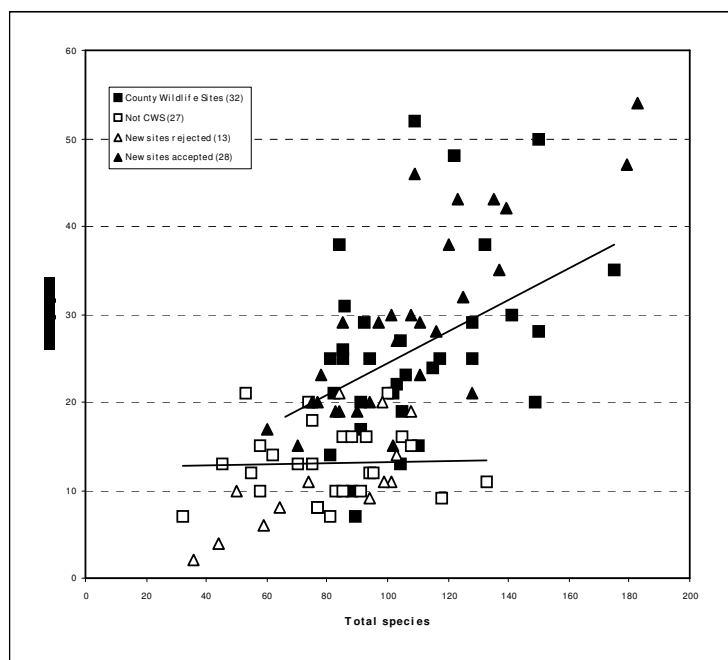
The numbers of axiophytes were compared with the total numbers of vascular plants for 29 sites designated as CWS and 23 sites that were considered not to have met the necessary criteria (DBRC 2008) over the period from 2003 to 2007. These results were used to predict that 20 or more axiophytes were needed for a site to be worthy of CWS status. Similar data were collected for 41 sites that had been surveyed in 2008 but had not yet been considered by the selection panel. The results are summarised here.

Apart from a few borderline cases, the axiophyte method was found to predict successfully which sites would be selected as County Wildlife sites. As yet, this approach has been tested only in comparison with the procedures currently used. More work is needed in order to assess its absolute validity as a measure of site condition.

A striking (and initially unexpected) result of this investigation was that the numbers of axiophytes recorded at a site did not necessarily correlate with the total species richness. In the rejected sites there was no correlation between the number of

axiophytes and the total number of species ($r_s = 0.095$). The County Wildlife Sites showed a positive correlation ($r_s = 0.428$), significant at the 5% level. The rejected sites included examples where there were long species lists with few axiophytes. Sites of conservation interest such as mires or saltmarsh may not have high species diversity, but a high proportion of the species present are axiophytes.

Species richness alone is not a good measure of the value of a site, but selecting the axiophytes from a species list provides a much more reliable indicator of a site's conservation interest.



Relationship between species richness and number of axiophytes. Number of axiophytes plotted against total number of species for County Wildlife Sites (CWS), rejected sites (not CWS), and new sites recorded in 2008.

References

Botanical Society of Britain and Ireland (BSBI) (2008). Axiophytes. <http://www.bsbi.org.uk/html/axiophytes.html> [Dec 2008].

Devon Biodiversity Records Centre (DBRC) (2008). The Devon Local Sites Manual: Policies and Procedures for the Identification and Designation of Wildlife Sites. Exeter: DBRC.